Operator's Manual

HYDRAULIC FRONT HITCH ATTACHMENT

For Cub Cadet Series 3000 Tractors

(Optional Manual Angling Kit 190-171-100)

INSTALLATION INSTRUCTIONS

Model Number

343

IMPORTANT:

READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

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NOTES

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WARNING

The tractors which use this front hitch attachment are equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered, or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.

In the State of California, the above is required by law (Section 4442 of the California Public Resources Code). Other States may have similar laws. Federal laws apply to federal lands. A spark arrester muffler is available at your nearest engine authorized service center.

IMPORTANT

SAFE OPERATION PRACTICES

THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR UNIT. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL— **HEED ITS WARNING**.

TO THE OWNER

This manual contains instructions for installation of the Front Hitch System, Model Number 190-343, on the Cub Cadet Series 3000 Tractors. Carefully read all sections and study the illustrations to ensure proper installation.

If the optional Hydraulic Angling Kit (190-288) is going to be installed on the Front Hitch System, its installation procedures should be performed in conjunction with those of this attachment.

Read and observe all WARNING and CAUTION statements. They are included to provide for the protection of the equipment installer and user, and to ensure the prolonged service life of the equipment.

NOTE

References to LEFT and RIGHT indicate the left and right sides of the tractor when facing forward in the operator's position. Reference to the FRONT indicates the grille end; to the REAR the drawbar end.

CALLING FOR SERVICE

If you are having difficulty assembling this product or if you have any question regarding the operation or maintenance of this equipment, contact your dealer. If you need help locating a dealer in your area, contact the Customer Dealer Referral Line by calling:

1-877-282-8684

SECTION I. FRONT HITCH COMPONENTS

Before beginning installation of the Front Hitch System, remove all parts from the shipping container. Refer to Figures 1 and 2 to confirm that all parts are present and to familiarize yourself with the part descriptions.

Throughout the installation instructions in this manual, the component part name is followed by the reference letter or number in parentheses to aid in identification.

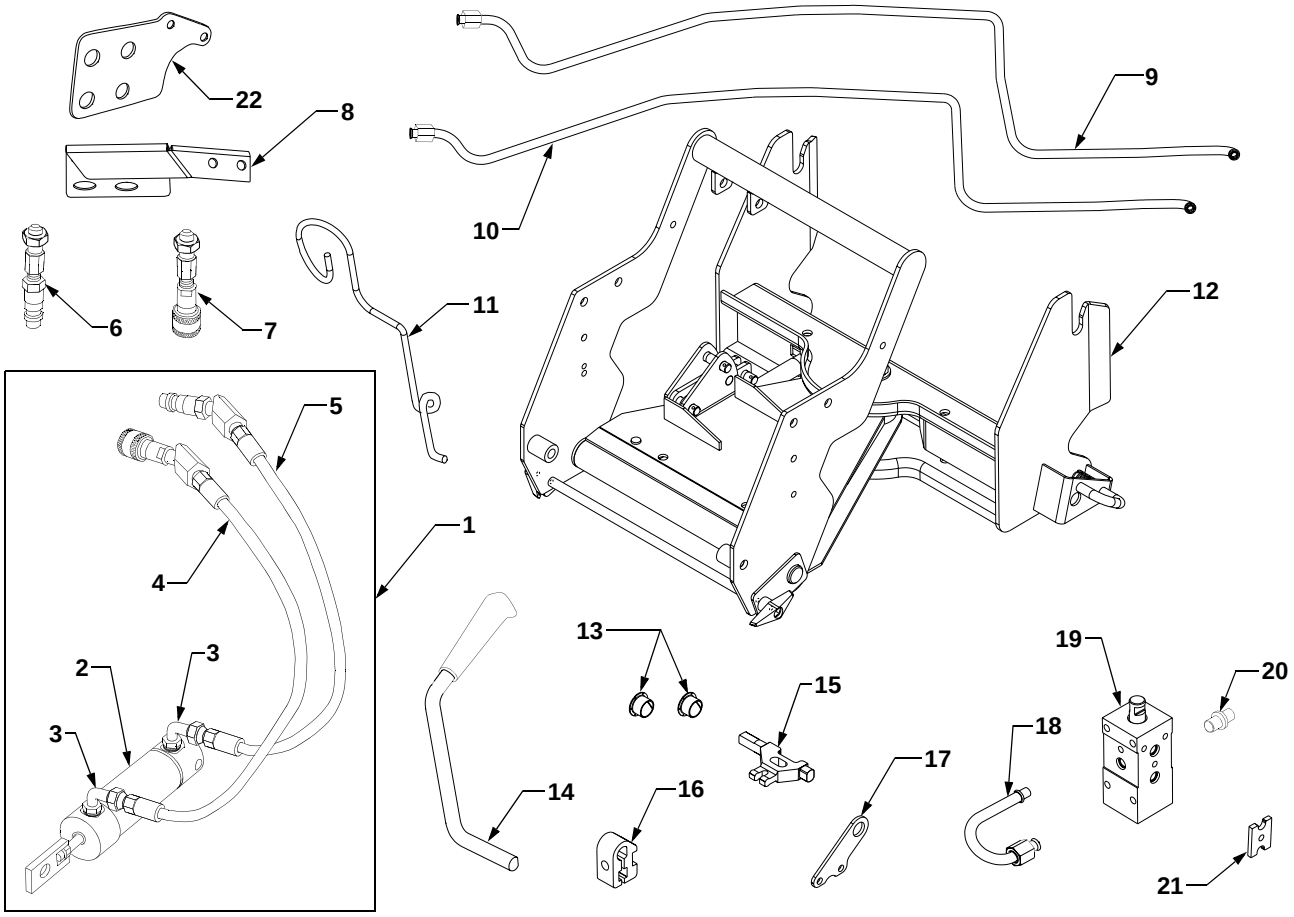
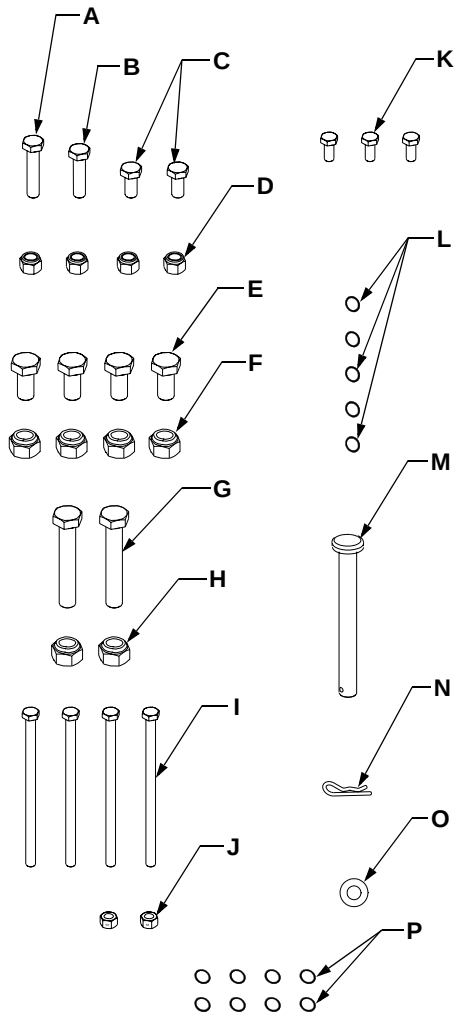


Figure 1

Ref. No.	Part No.	Description	Qty.
1	N/A	Cylinder and Hose Assembly	1
2	717-3456	Lift Cylinder	1
3	727-3012	90° Fitting w/O-Ring	2
4	N/A	Hydraulic Hose Ass'y. ..... (w/Female Coupling)	1
5	N/A	Hydraulic Hose Ass'y. ..... (w/ Male Coupling)	1
6	N/A	Hydraulic Coupling Ass'y. - Male .	1
7	N/A	Hydraulic Coupling Ass'y. - Female	1
8	703-3184	Fitting Bulkhead — For use with tractors having welded running board brackets.	1
9	727-3142	Hydraulic Lift Tube - Down	1
10	727-3141	Hydraulic Lift Tube - Up	1
11	747-3372	Hose Support Rod	1
12	N/A	Front Hitch Ass'y.	1
13	741-0491	Nylon Flange Bearing	2
14	747-3350	Handle, Aux. Valve #1	1
15	748-3081	Lift Link	1
16	748-3082	Handle Clamp	1
17	703-3154	Lift Valve Bracket	1
18	727-3149	Hydro Return Tube, Aux. Valve #1	1
19	717-3452	Hydraulic Valve Assembly	1
20	711-3294	Valve Adapter	1
21	703-1803	Double Valve Clamp	1
22	703-3442	Fitting Bulkhead — For use with tractors having bolt up running board brackets.	1



Ref. No.	Part No.	Description	Qty.
A	710-0805	Hex Cap Screw, 5/16-18 x .1.5	1
B	710-0528	Hex Cap Screw, 5/16-18 x 1.25	1
C	710-3025	Hex Cap Screw, 5/16-18 x.625 GR5	2
D	712-0429	Hex Insert Lock Nut, 5/16-18	4
E	710-3131	Hex Cap Screw, 1/2-13 x 1.0 GR5	4
F	712-3083	Hex Insert Lock Nut, 1/2-13	4
G	710-3104	Hex Cap Screw, 1/2-13 x 2.25 GR5	2
H	712-3083	Hex Insert Lock Nut, 1/2-13	2
I	710-1058	Hex Cap Screw, 1/4-20 x 4.0	4
J	712-0291	Hex Lock Nut, 1/4-20	2
K	710-3013	Hex Cap Screw, 1/4 -20 x 1/2	3
L	721-3021	O-Ring, .301 ID x .070 Dia	5
M	711-0578	Clevis Pin	1
N	714-0145	Internal Cotter Pin	1
0	736-0159	Flat Washer, .349 x .879 x .063	1
P	721-0492	O-ring, Backup	8

Figure 2

MODEL 190-171-100
OPTIONAL MANUAL ANGLING KIT

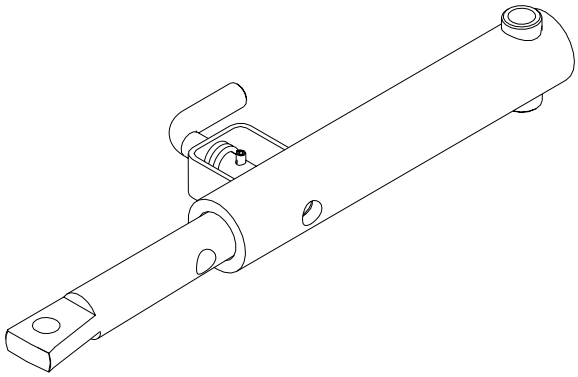


Figure 3

SECTION II. TRACTOR PREPARATION

This section contains instructions for preparing the tractor for installation of the Front Hitch System.

WARNING

Place the tractor on a firm and level surface, disengage the PTO, and turn the ignition switch to the OFF position. Chock the front wheels to prevent the tractor from rolling in either direction.

WARNING

Allow the tractor to cool if it has been recently operated.

A. REMOVE THE TRACTOR SEAT.

NOTE

On some tractors, socket head screws were used to secure the seat slide channels to the tractor frame.

1. Slide the seat rearward and remove the two torx head screws (or socket hd. screws) from the seat slide channels (See Figure 4).

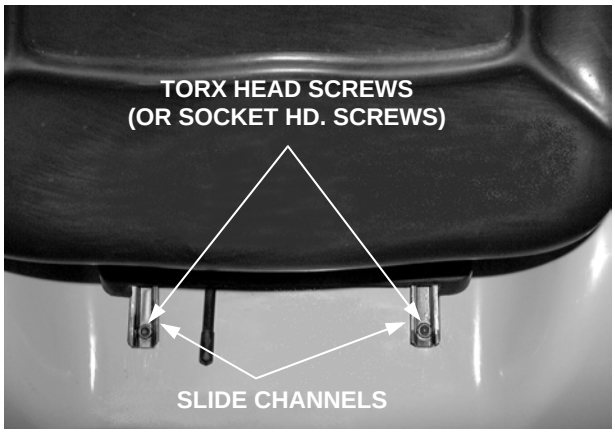


Figure 4

2. Slide the seat forward and remove the two rear torx head screws (or socket hd. screws) from the slide channels.
3. Grasp the rear of seat base, then carefully lift and tip the complete seat assembly so that it rests on its side. Use care to avoid scratching the paint.
4. Lift the locking tab of the connector and unplug the wire harness connector from the seat switch (See Figure 5).
5. Place the seat assembly to the side.

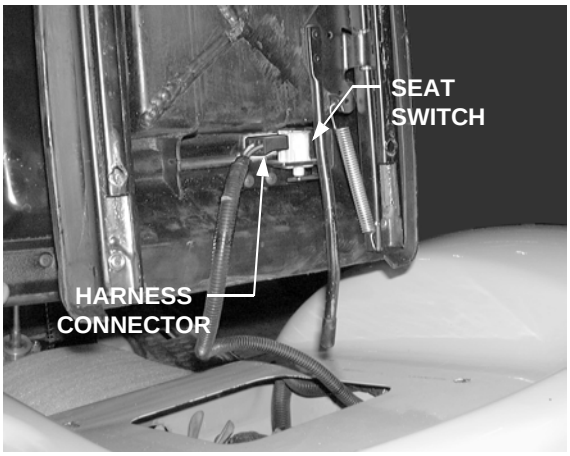


Figure 5

B. REMOVE THE FENDER AND RUNNING BOARD ASSEMBLY

NOTE

The front hitch attachment can be installed without removing the tractor fenders. However, because of limited access and to ensure proper installation, it is recommended that the fender and running board assembly be removed from the tractor.

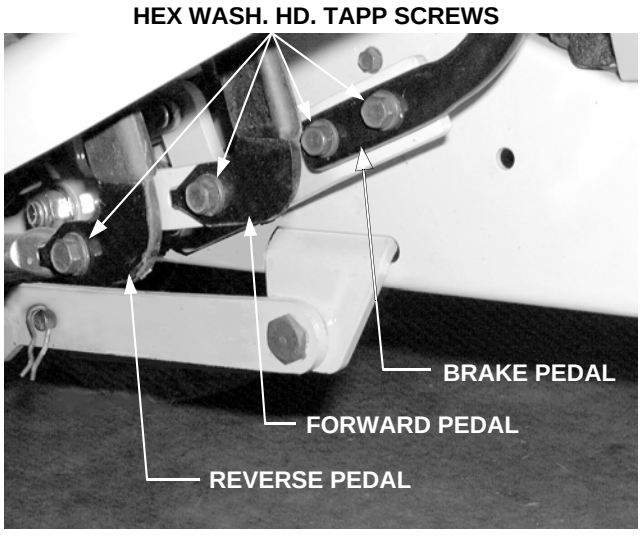


Figure 6

1. From beneath the right running board, remove the hex wash. hd. tapp screws and remove in the following order: the reverse control pedal, forward control pedal, and the brake pedal (See Figure 6).

NOTE: The following step 2 applies only to tractors equipped with the *Diff-Lock* feature.

2. From beneath the left running board, remove the retaining ring and hex wash. hd. tapp screw to remove the diff-lock pedal. *Use care to avoid losing the nylon bearing in the pedal* (See Figure 7).

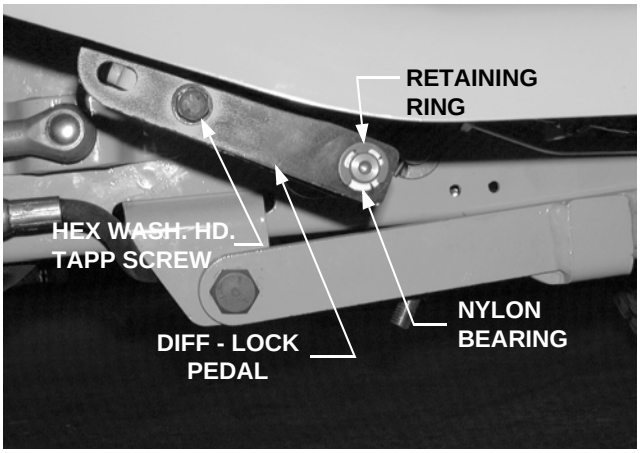


Figure 7

3. Raise the hood and remove the side panels per the instructions in the tractor Operator's Manual.

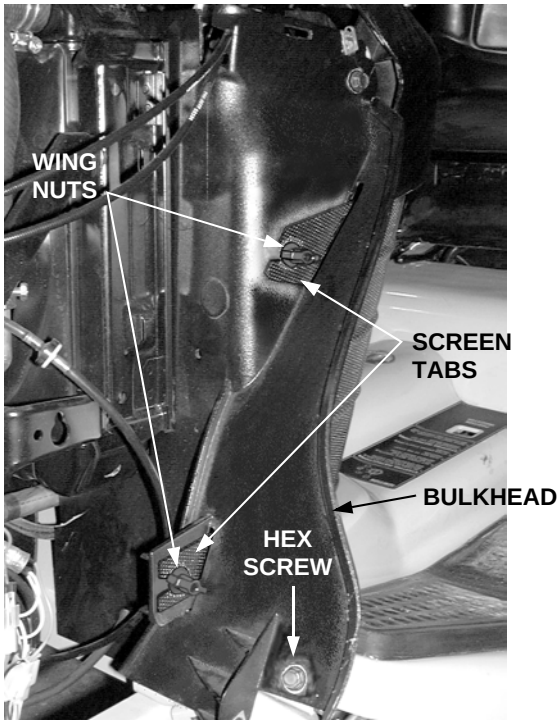


Figure 8

4. Loosen the four wing nuts securing the dash screen to both sides of the bulkhead; then slide the screen rearward and out from below the dash panel (See Figures 8 and 9)

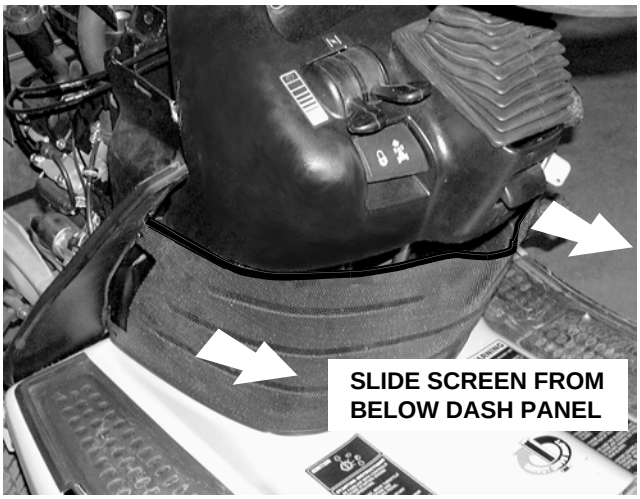


Figure 9

5. Remove the two hex screws securing the bottom of the bulkhead and the front of the running board to both sides of the frame (See Figure 8).

6. Carefully pull up the rear of the RH and LH foot pads and remove the hex screws securing the running board to the frame (See Figure 10).

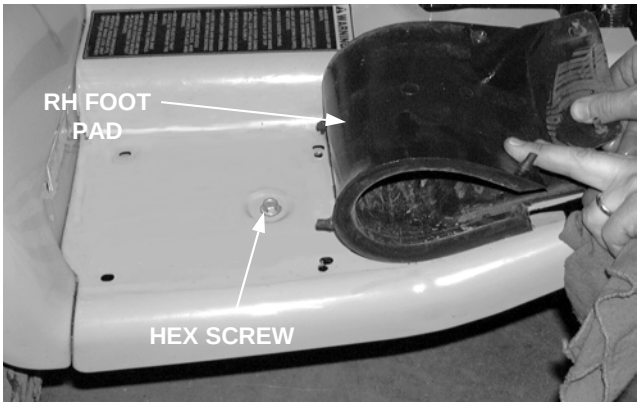


Figure 10

7. From underneath the rear fender, turn the four tail light sockets counterclockwise (approximately 1/4 turn) until aligned with the notches of the reflector housing and pull the sockets from housings. *Be careful to avoid pulling the bulbs from the sockets.*

8. Remove the cap from the fuel tank.

WARNING

Use care when handling the fender and running board assembly. The edges could cause cuts to the skin.

9. With the help of an assistant, lift the front of the running board off the frame brackets, then raise the rear fender over the neck of the fuel tank and the lift handle to remove the fender assembly.
10. Reinstall the cap onto the fuel tank.

C. REMOVE THE LEFT REAR WHEEL.

WARNING

Ensure the front wheels are chocked before raising the rear of the tractor. Use jack stands to support the tractor; do not work on the tractor when supported only by the jack.

1. Use a jack placed under the rear hitch plate to raise the rear end of the tractor.
2. Position jack stands under each side of the frame, just forward of the rear wheels. Lower the tractor onto the jack stands and remove the jack.
3. Remove the lug nuts to remove the left rear wheel assembly.

NOTE

The position of the fuel tank limits the working space available for installing the hydraulic valve included in this kit. Although not required, it is recommended that the fuel tank be moved rearward as described in the following section D to increase the space. If the optional Hydraulic Angling Kit (190-288-100) is also being installed, the tank must be moved rearward.

D. MOVE THE FUEL TANK REARWARD.

1. Remove the two hex cap screws and hex flange lock nuts securing the top of the hitch plate to the frame (See Figure 11).
2. Loosen, but do not remove, the two hex cap screws and flange nuts at the bottom of the hitch plate
3. Tip the top of the hitch plate back as needed to slide the fuel tank rearward. *NOTE: The transmission oil fill tube/dipstick may be pulled from the transmission housing when the hitch plate is tipped. If so, plug or cover the hole in the transmission to prevent dirt or debris from entering.*

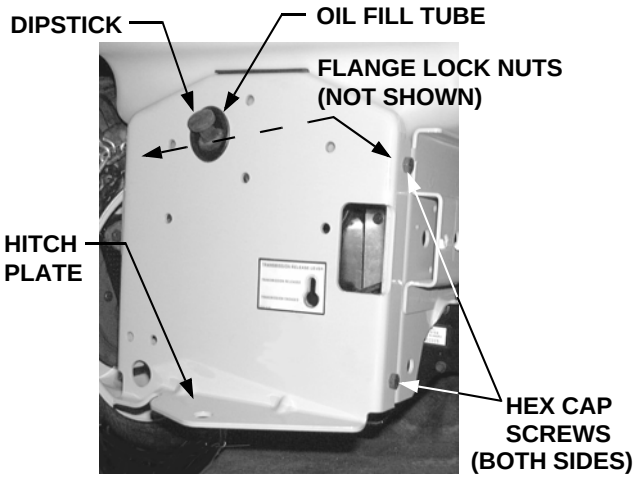


Figure 11

SECTION III. INSTALLATION

This section contains instructions for installing the Front Hitch System on the tractor. **If the optional Hydraulic Angling Kit (190-288-100) is also being installed, refer to the installation instructions in its Operator's Manual as you complete each of the following steps. Some of the instructions for installation of the Angling Kit will supersede or supplement instructions for the Front Hitch.**

A. INSTALL THE HYDRAULIC VALVE.

WARNING

Allow the tractor to cool if recently operated.

CAUTION

Position a suitable container to catch any oil leakage that may occur when disconnecting the hydraullic lines. Obey all applicable laws for disposal of oil.

NOTE

Early production tractors were built with a standard O-ring and a backup O-ring on the hydraulic lines at their connections to the hydraulic valve. When disconnecting the hydraulic lines, make certain to note whether there are one or two O-rings at each connection (O-rings may stick in valve bores). *Extra backup O-rings have been provided with this kit for use if needed. The backup rings can be used to ensure tight connections at the hydraulic valves.*

NOTE

Tractors built after Mfg. Code 1D178G20023 are equipped with a flexible hose instead of the hard hydro return tube (See Figure 13). If equipped with the flexible hose, skip step 1 and refer to step 2

1. **Mfg. Code 1D178G20022 and Before.** Secure the 'T' fitting to avoid damaging the hydraulic lines and loosen the coupling nut; then remove the hex screw and valve clamp to remove the standard hydro return tube (See Figure 12). Remove the O-ring and backup ring (if applicable) from the tube. Retain the valve clamp, screw and backup ring.

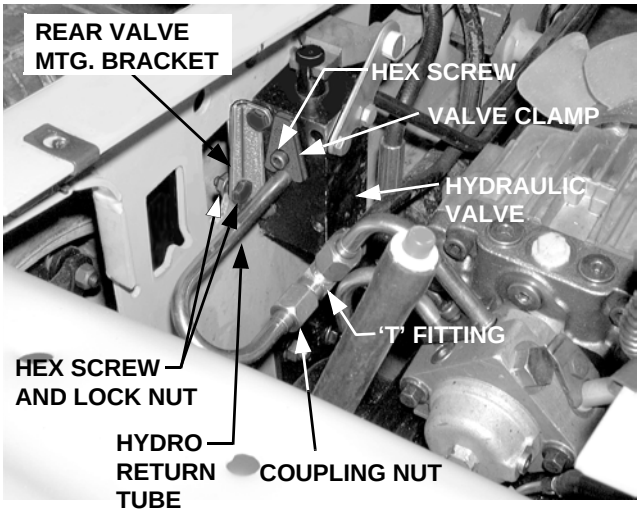


Figure 12

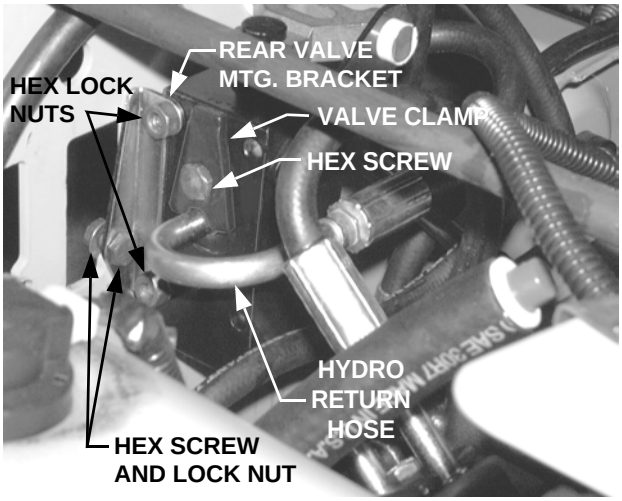


Figure 13

2. **Mfg. Code 1D178G20023 and After.** Remove the hex screw and valve clamp to disconnect the hydro return hose from the valve (See Figure 13). Use care to avoid losing the O-Ring and backup ring (if applicable) from the end of the hose. Retain the valve clamp and screw.
3. Remove the hex cap screw and lock nut fastening the rear valve mtg. bracket to the tractor frame (See Figure 12 or 13). Retain the fasteners.
4. Remove the two hex screws and lock nuts securing the hydraulic valve between the front and rear valve mtg. brackets (See Figure 13 and 14). Remove and retain the rear mtg. bracket and lock nuts.

NOTE

Tractors built prior to Mfg. Code 1H018G have the standard center lift hydraulic lines routed to the outside of the frame. The standard lines should be moved to the inside of the frame to provide space for routing the front hitch hydraulic lines. The following step 5 applies **ONLY** to these tractors.

5. Move the standard lift cylinder lines to the inside of the frame as follows:

   a. Remove the hex screw and valve clamp securing the hydraulic tube in the front of the valve (See Figure 14). Use care to avoid losing the O-Ring and backup ring (if applicable) from the end of the tube.

   b. Remove the two hex cap screws and slide the lift valve bracket off the lift link (See Figure 14). Use care to avoid losing the nylon bearing.

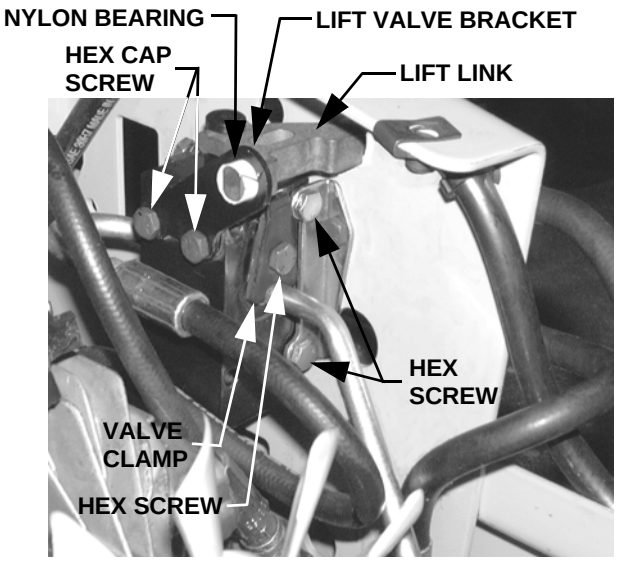


Figure 14

   c. After first noting the position of the hydraulic lines (top outlet port to front of cylinder) remove the hex screw and double valve clamp to disconnect the hydraulic lines from the valve (See Figure 15). Use care to avoid losing the O-Rings and backup rings (if applicable) from the end of the hoses.

   d. Slide the valve rearward off the hydraulic tube and out of the slot in the lift link (See Figure 16) to remove from the tractor.

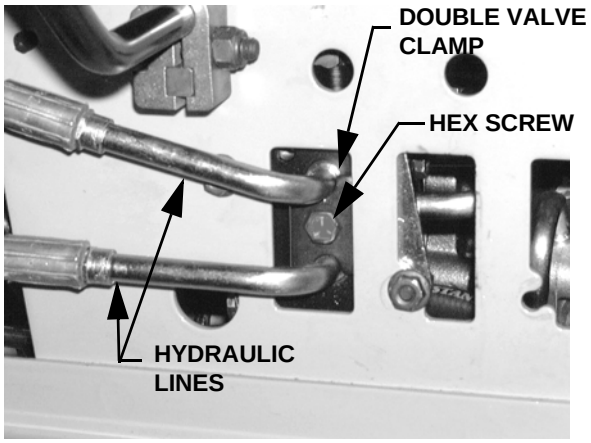


Figure 15

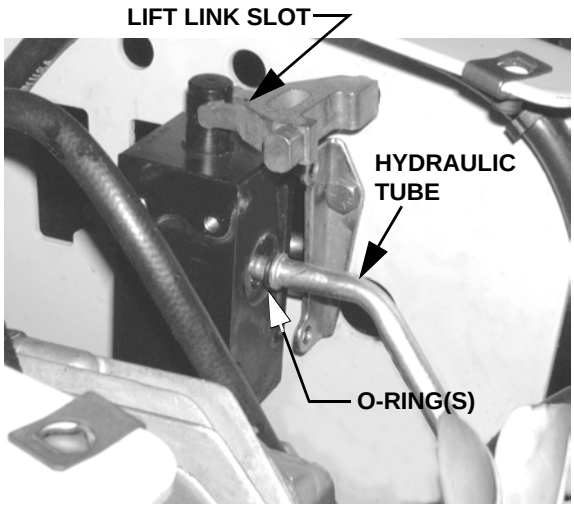


Figure 16

   e. While holding the valve spool in place, rotate the body of the valve assembly 180° so that the outlet ports face inward and the valve spool arrow points rearward(See Figure 17).

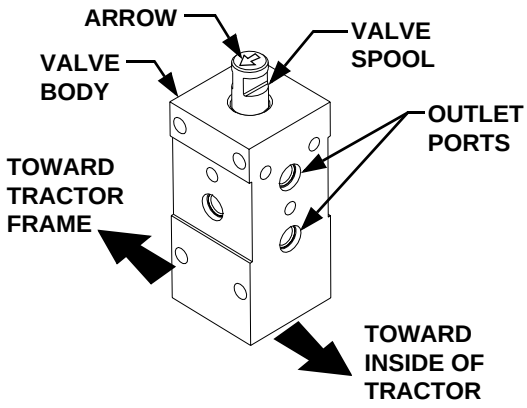


Figure 17

f. If not already installed, install a backup O-ring (P) between the existing O-ring and the flange of the front hydraulic tube.

g. With the outlet ports facing inward, align the valve assembly with the front hydraulic tube and the slot ot the lift link, then slide the valve into position in the tractor.

h. Slide the lift valve bracket w/nylon bearing onto the lift link and secure with the two hex cap screws (See Figure 18).

i. Secure the front hydraulic tube with the valve clamp and hex screw (See Figure 18).

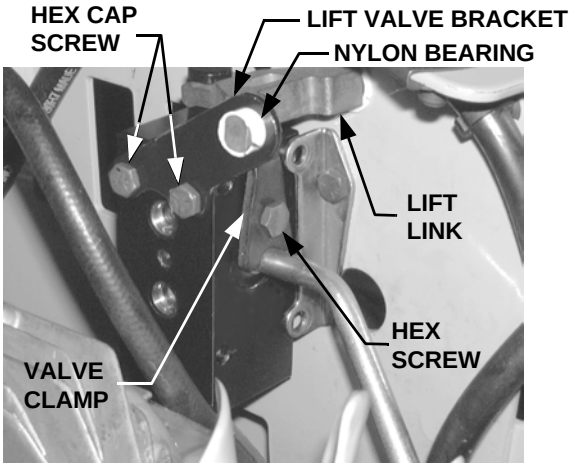


Figure 18

j. If not already installed, install a backup O-ring (P) between the existing O-ring and the flange on each of the hydraulic lines, then insert the lines into their respective outlet ports as noted previously. Secure with the double valve clamp and hex screw (See Figure 19).

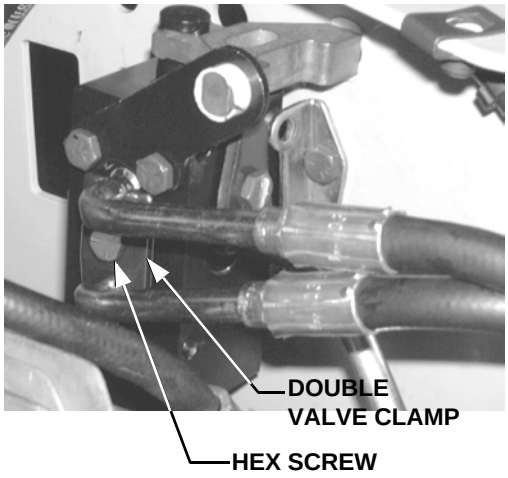


Figure 19

6. Slide a backup O-ring (P) and O-Ring (L) onto each end of the valve adapter (20), and insert the valve adapter into the rear port of the standard center lift valve (See Figure 20).

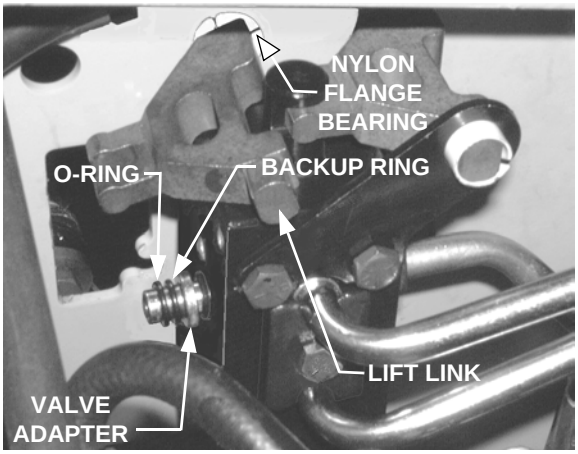


Figure 20

7. Slide a nylon flange bearing (13), flange first, onto the longer arm of the lift link (15). Using care to avoid damage to the bearing, insert the lift link and bearing into the front most available hole of the tractor frame (See Figure 20).

CAUTION

The spool of the hydraulic valve assembly (19) must be correctly positioned in the valve body to ensure proper operation of the valve. The arrow on top of the spool must point in the direction of the hydraulic system oil flow.

8. Referring to Figure 21, check the position of the spool in the hydraulic valve assembly (19). With the outlet ports of the valve body facing outward, the arrow should point toward the rear. If necessary, rotate the spool.

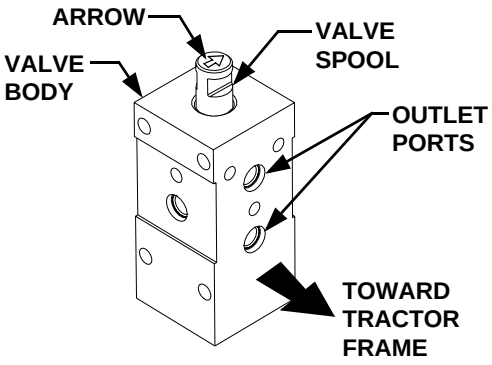


Figure 21

9. Align the front port of the hydraulic valve (19) with the valve adapter (20) and the notch of the valve spool with the slot of the lift link (17); then slide the hydraulic valve into position behind the installed valve (See Figure 22). Hold the valve in position.

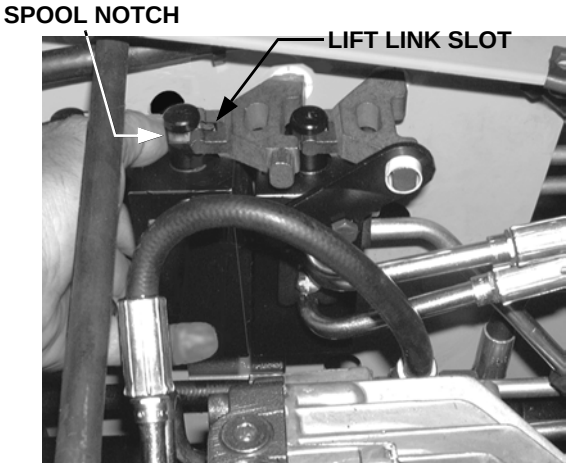


Figure 22

10. Insert two of the hex cap screws (I) through the inner holes of the valves and loosely fasten with the two hex lock nuts (J). *NOTE: the lower/inside screw should be inserted from the rearward side of the valve for ease of installation* (See Figure 23).

11. Position the rear valve mtg. bracket and insert the remaining two hex cap screws (I) through the front valve mtg. bracket, valves, and rear mtg. bracket (See Figure 23). Loosely fasten with the previously removed hex lock nuts.

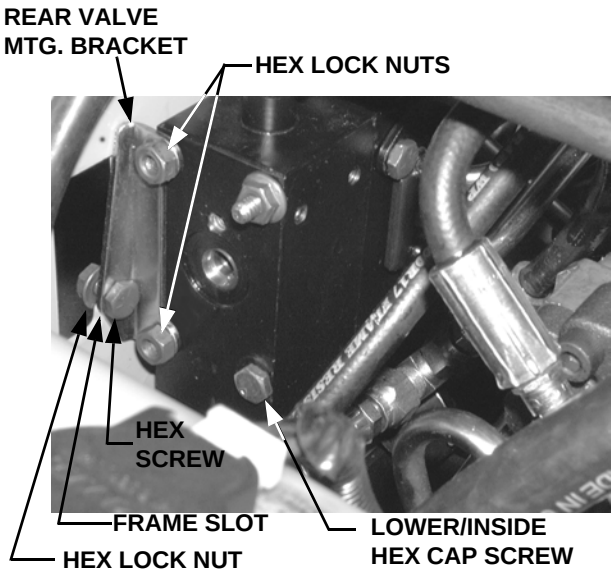


Figure 23

12. Align the rear mtg. bracket hole with the slot in the lower/front corner of the frame opening and loosely install the previously removed hex screw and lock nut (See Figure 23).

13. In an alternating pattern, tighten the four hex cap screws and lock nuts fastening the valves together. Then tighten the hex screw and lock nut to secure to the frame (See Figures 23).

14. Slide a nylon flange bearing (13), flange first, onto the lift link (15).

15. Slide the lift valve bracket (17) onto the flange bearing and lift link, and secure to the hydraulic valve with two hex cap screws (K). See Figure 24.

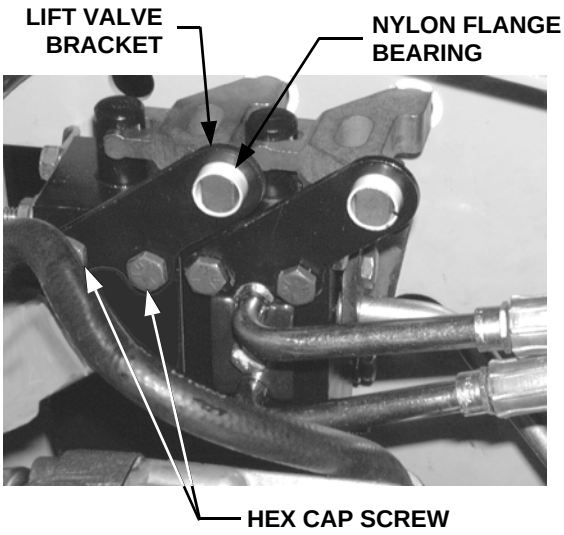


Figure 24

NOTE

Steps 16 and 17 apply only to units built before Mfg. Code 1D178G20023 that are equipped with a hard hydro return tube. If equipped with a flexible return hose, refer to step 18.

16. **Mfg. Code 1D178G20022 and Before.** Slide a backup O-ring (P) against the flange on the hydro return tube (18) and install an O-Ring (L) onto the tube. Insert the hydro return tube into the rear port of the new valve, while aligning the flanged end of the tube with the tapered end of the hydraulic 'T' fitting (See Figure 25). Thread the return tube coupling nut onto the 'T' fitting finger tight.

17. Install the previously removed valve clamp and hex screw to secure the return tube in the hydraulic valve (See Figure 26). Support the return tube and fully tighten the coupling nut .

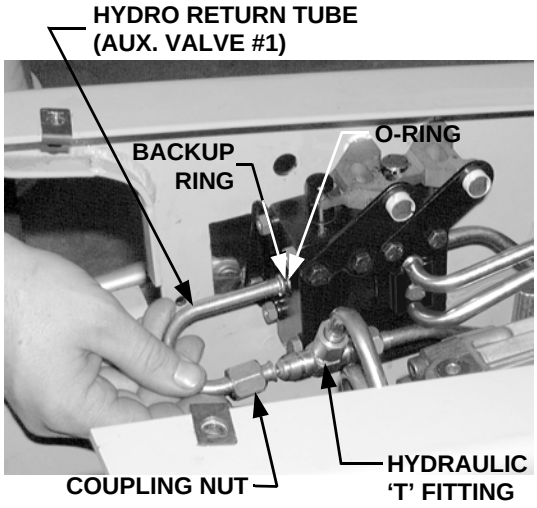


Figure 25

18. **Mfg. Code 1D178G20023 and After.** If not already installed, install a backup O-ring (P) between the existing O-ring and the flange of the hydro return hose. Insert the hydro return hose into the rear port of the new valve and secure with the previously removed valve clamp and hex screw.

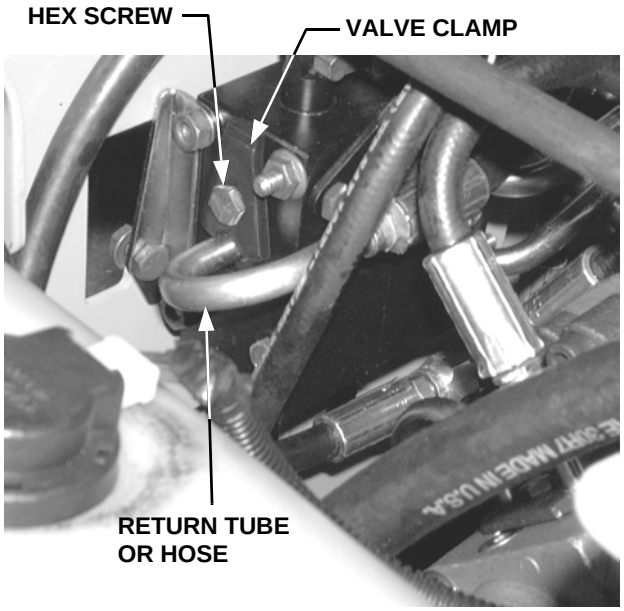


Figure 26

B. INSTALL THE HYDRAULIC TUBES AND COUPLING ASSEMBLIES.

NOTE

Early production tractors were built with running board mounting brackets welded to the frame, while later units have bolt up brackets. Note which bracket is used on the tractor to determine which fitting bulkhead will be used.

1. **Tractors With Welded Frame Brackets.** Install the fitting bulkhead (8) on the LH frame mounting bracket using the two hex cap screws (C) and hex insert lock nuts (D) as shown in Figure 27.

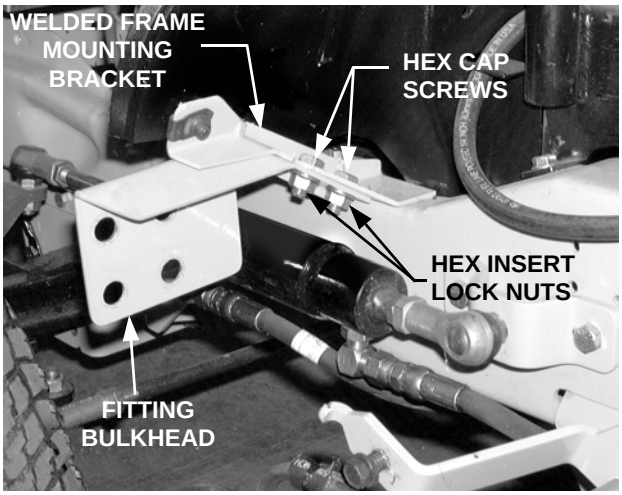


Figure 27

2. **Tractors With Bolt Up Frame Brackets.** Install the fitting bulkhead (22) on the LH frame mounting bracket using the two hex cap screws (C) and hex insert lock nuts (D) as shown in Figure 28.

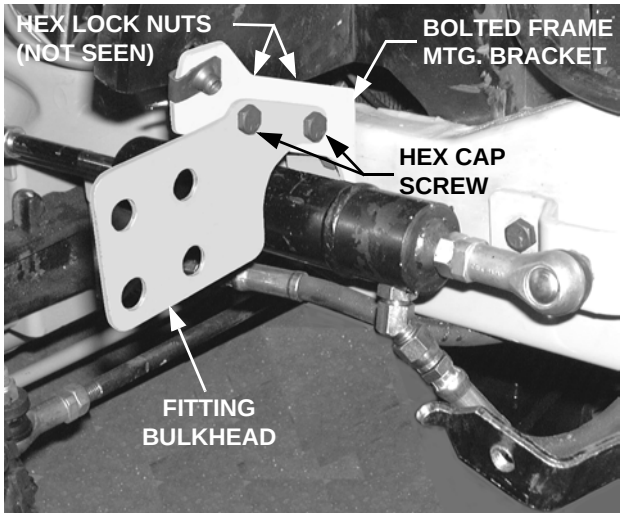


Figure 28

3. Remove the hex nuts from both the male and female hydraulic coupling assemblies (6 and 7) and install as follows (Refer to Figure 29):
   a. From the front of the fitting bulkhead, insert the male coupling assembly (6) into the top inside hole of the bulkhead. Secure with the hex nut.
   b. Insert the female coupling assembly (7) into the bottom inside hole of the bulkhead and secure with the hex nut.

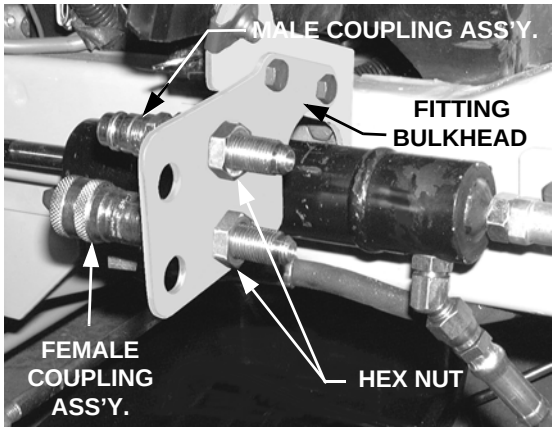


Figure 29

4. Slide a backup O-ring (P) against the tube flange and install an O-Ring (L) on the end of the 'up' hydraulic tube [10 (shorter bends)]. Insert the tube into the lower outlet port of the hydraulic valve. Align the flanged front end of the tube with the tapered male coupling assembly (6) and loosely fasten with the tube coupling nut (See Figure 30).
5. Slide a backup O-ring (P) against the tube flange and install an O-Ring (L) on the end of the 'down' hydraulic tube (9). Insert the tube into the upper outlet port of the hydraulic valve. Align the flanged front end of the tube with the tapered female coupling assembly (7) and loosely fasten with the tube coupling nut (See Figure 30).

CAUTION

The double valve clamp (21) has rounded edges on one side and flat edges on the other. Always place the flat edged side toward the hydraulic valve when installing the clamp.

6. With its flat surface toward the valve, position the double valve clamp (21) between the tubes, squarely against the tube beads. Install a hex cap screw (K) through the clamp and into the vlave. Carefully tighten to secure the tubes in the valve (See Figure 31).

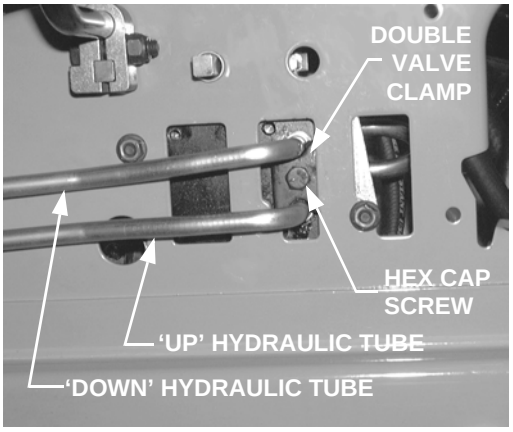


Figure 31

7. Fully tighten the coupling nuts on the front end of the tubes.

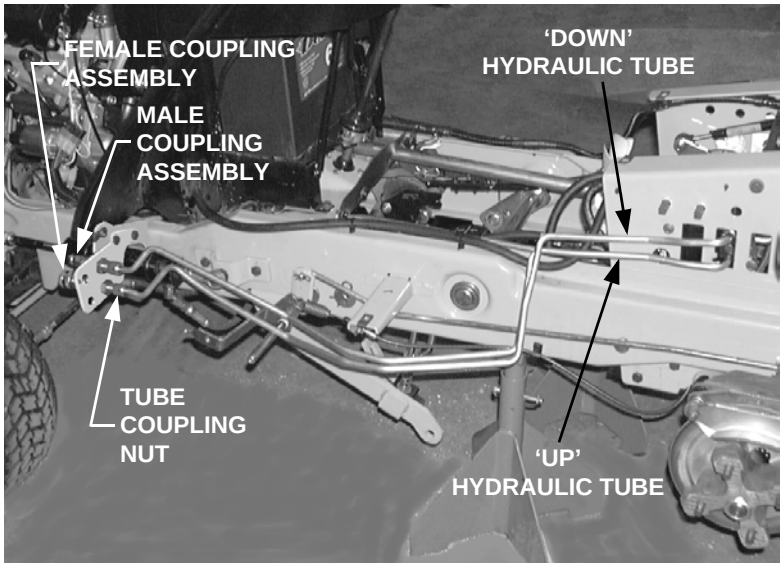


Figure 30

C. INSTALL THE FRONT HITCH COMPONENTS.

WARNING

If the tractor has been recently operated, the muffler, exhaust pipe, and surrounding areas will be HOT. Allow the tractor to cool before continuing installation.

NOTE

If a mower deck is installed on the tractor, the deck front hanger bracket will cause interference during the *initial* installation of the front hitch components. Lower the deck to the ground and temporarily remove the front hanger bracket from the tractor. Refer to the mower deck Operator's Manual if necessary.

NOTE

The front hitch assembly can remain on the tractor while the mower deck is installed. However, the mower deck drive shaft must be disconnected from the PTO shaft whenever a front attachment is being powered off the front of the PTO shaft.

1. Remove the bumper from the front of the tractor by removing the hex cap screw and lock nut from each side of the frame (See Figure 32). Store the bumper and hardware.

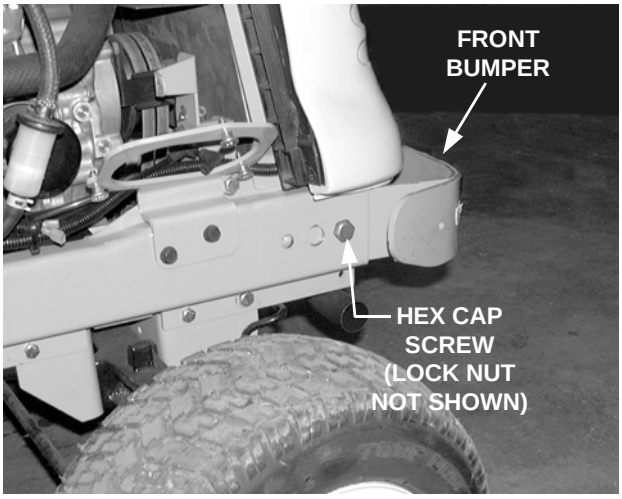


Figure 32

2. Install the hose support rod (11) onto the left side of the mtg. plate assembly as follows (Refer to Figure 33):

   a. Align the small loop of the support rod with the 5/16" hole, and insert the short hook at the bottom of the rod into the hole below.

   b. Slide the flat washer (O) onto the hex cap screw (A) and insert the screw through the rod loop and mtg. plate. Secure with the hex insert lock nut (D).

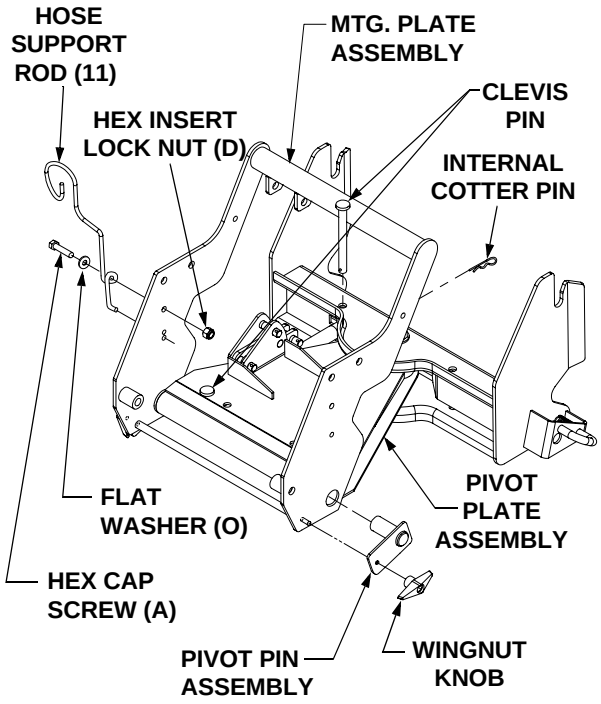


Figure 33

3. Position the hitch assembly at the front of the tractor so that the mounting plate assembly aligns with the frame.

NOTE

If desired to lessen the weight, the mounting plate assembly can be separated from the pivot plate assembly by removing the two wingnut knobs and withdrawing the pivot pin from each side of the mounting plate (See Figure 33).

4. Lift the rear of the mounting plate to align its lower hole (w/spacer) with the lower hole in the quick latch bracket on either side of the frame (See Figure 34). Insert a hex cap screw (G) and loosely fasten with a hex insert lock nut (H).

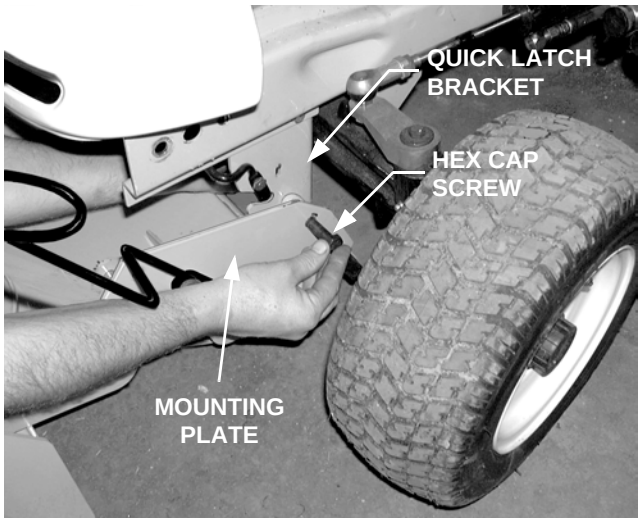


Figure 34

5. Align the mounting plate and latch bracket holes on the other side of the tractor and loosely fasten with the remaining hex cap screw (G) and insert lock nut (H).
6. Pivot the top of the mounting plate upward and align the upper two holes on each side of the plate with those of the frame. Secure with the four hex cap screws (E) and hex insert lock nuts (F). See Figure 35.

Figure 35

7. Fully tighten the lower hex cap screws (G) and insert lock nuts (H) on both sides of the mounting plate.
8. If the pivot plate assembly was separated from the mounting plate and the mower deck is installed on the tractor, reinstall the deck front hanger bracket now. Align the pivot plate with the mounting plate and reassemble with the two pivot pin assemblies and wingnut knobs (See Figure 33).
9. If the front hitch components were installed as assembled and the mower deck is installed, reinstall the deck front hanger bracket as follows:
   a. Loosen the wingnut knob on the left side of the front hitch assembly.
   b. Remove the wingnut knob and pivot pin from the right side of the hitch to lower the right side of the pivot plate assembly (See Figure 36).

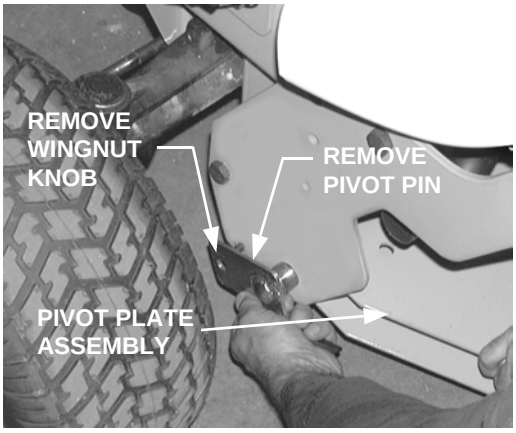


Figure 36

   c. Maneuver the front hanger bracket under the exhaust pipe to position in the frame. Pull the quick latch rod downward and slide the front hanger bracket into the latch receiver slots (See Figure 37).

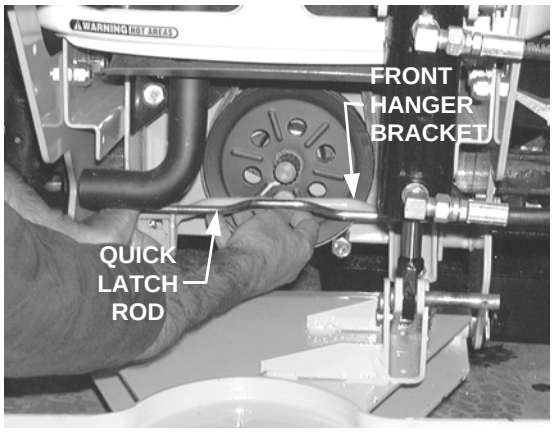


Figure 37

   d. Align the right side of the pivot plate assembly; install the right pivot pin; and tighten both wingnut knobs.

D. INSTALL THE LIFT CYLINDER AND HOSES.

NOTE

The lift cylinder, elbows, hydraulic hoses, and coupler fittings were preassembled at the factory to ensure proper sealing of the connections and position of the hoses (angled slighly upward). Refer to the assembly drawing in Figure 1 (Page 4) to verify proper assembly.

1. Remove the internal cotter pin and clevis pin from the front end of the float arms on the pivot plate assembly (See Figure 38).

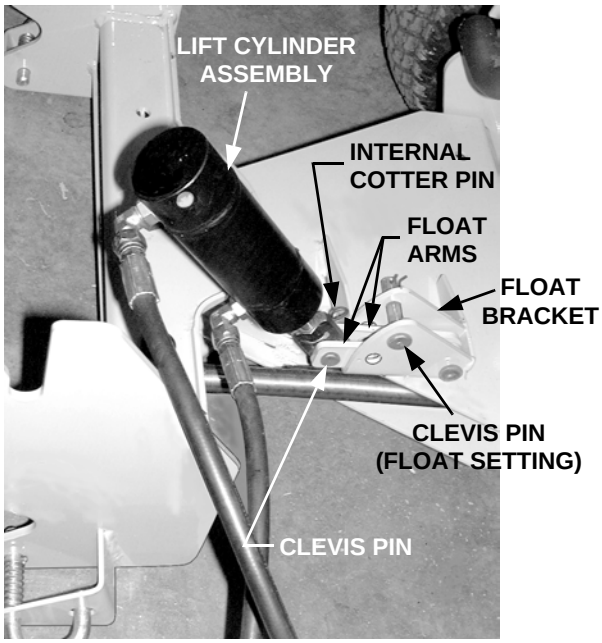


Figure 38

2. Split the two float arms and position the piston of the lift cylinder between them. Insert the clevis pin through the arms and piston and secure with the internal cotter pin (See Figure 38).

3. Remove the internal cotter pin and float setting clevis pin from the float bracket (Refer to Figure 38).

4. Pivot the lift cylinder upward to position between the mounting brackets of the mounting plate. Insert the clevis pin (M) through the mounting brackets and cylinder and secure with the internal cotter pin (N). See Figure 39.

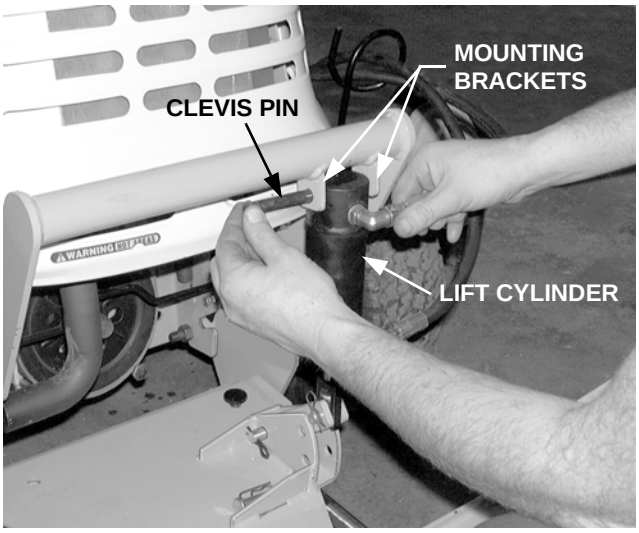


Figure 39

5. Route the hydraulic hoses around the left side of the tractor and up through the pigtail of the hose support rod (See Figure 40).

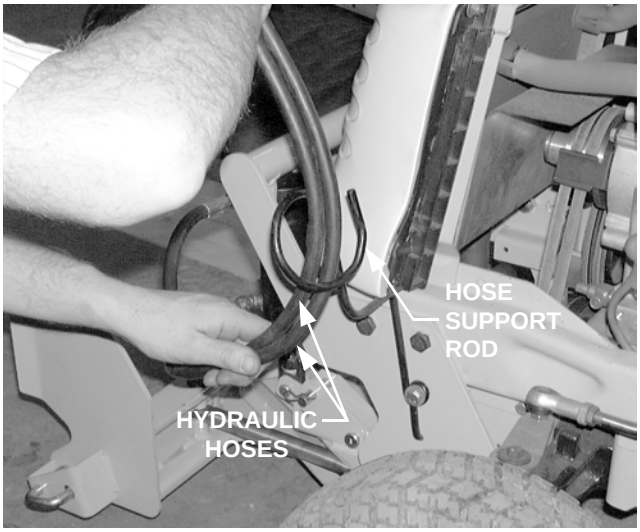


Figure 40

6. Remove the protective caps from both the male and female coupling assemblies on the fitting bulkhead. Snap the caps together to limit their movement.

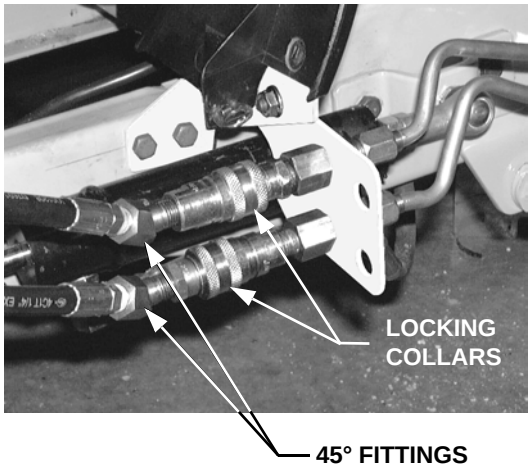


Figure 41

7. Compress the locking collar on the female fittings and attach the hoses to their respective coupling assemblies (See Figure 41). ***NOTE: the 45° fittings on the hoses should angle outward and upward to properly position the hoses.***

NOTE

It may be necessary to extend or contract the lift cylinder piston by applying pressure to the front hitch yoke when performing the following step 8.

8. Reinstall the float setting clevis pin as follows (Refer to Figure 42):

   a. To allow the front hitch to float, insert the clevis pin in the upper hole of the float bracket and secure with the internal cotter pin as shown in Figure 42.

   b. To set the front hitch in the fixed position, align the holes in the float arms with the lower hole in the float bracket and insert the clevis pin. Secure with the internal cotter pin.

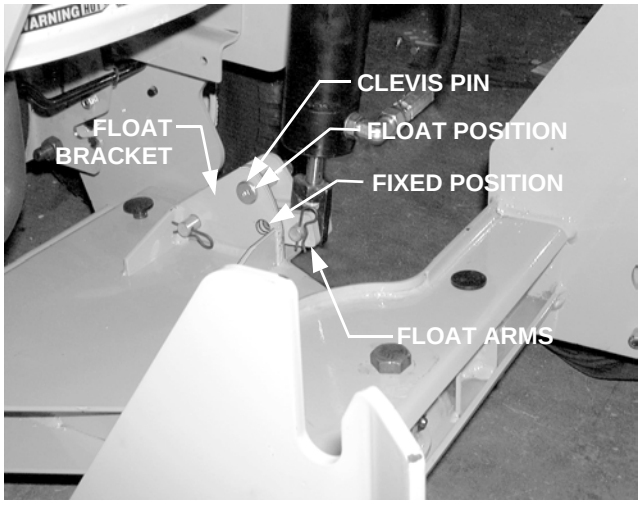


Figure 42

NOTE

To ease installation of the fender/running board assembly, do not install the new valve handle (14) until after the fender has been installed.

SECTION IV. TRACTOR REASSEMBLY

A. REPOSITION FUEL TANK AND HITCH PLATE.

1. Slide the fuel tank fully forward in the frame slots.
2. If used, remove any plug or covering from the dipstick hole of the transmission housing.
3. While guiding the dipstick tube into the transmission opening, pivot the hitch plate up into position on the frame. Install the two hex cap screws in the upper holes of the hitch plate and secure with the hex flange lock nuts.
4. Tighten the lower hex cap screws and flange lock nuts of the hitch plate.

B. REINSTALL THE FENDER AND RUNNING BOARD ASSEMBLY.

1. Remove the cap from the fuel tank. Make certain the tail lights and wires are draped over the top of the fuel tank, and the seat switch wire lead is inside the tractor frame (See Figure 43).

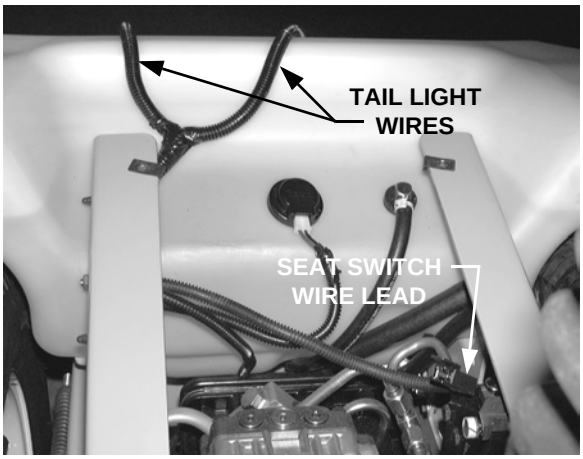


Figure 43

2. With the help of an assistant, install the fender/ running board assembly as follows:
   - Lower the front of the running board into position above the frame.
   - Guide the lift handle through the slot as you lower the rear fender.
   - Route the tail light wires along the upper/rear of the fuel tank and position the rear fender so the tail light reflector housings clear the fuel tank, then lower the fender over the fill neck of the fuel tank. Do not damage the reflector housings by forcing the fenders into place. Replace the fuel cap.
   - Press the front of the running board onto the mounting brackets on each side of the frame.
3. Using care to avoid dislodging the bulbs from the sockets, install the tail light sockets in the reflector housings as follows:
   - Reverse Lights - Install the light sockets having a WHITE wire in the inner hole of the housing
   - Tail Lights - Install the remaining two light sockets in the outer holes of the housing.
4. Fasten the middle of the running boards to the frame brackets with the two hex screws. Reinstall the RH and LH foot pads by pulling the locking projections through the running board and fender. Refer to Figure 10.
5. Align the bulkhead and running board with the frame mounting brackets and secure with the two hex screws removed earlier. Refer to Figure 8.
6. Align the four tabs of the dash screen with the slots in the bulkhead, then slide the screen forward beneath the dash panel while guiding the tabs under the four wing nuts. Tighten the wing nuts to secure the screen. Refer to Figure 8.

NOTE: The following step 7 applies only to tractors equipped with the Diff-Lock feature.

7. Insert the diff-lock pedal down through the left running board. Slide the pedal w/bearing onto the pivot shaft and install the previously removed retaining ring. Align the pedal with the engagement bracket and secure with the hex wash. hd. tapp screw. Refer to Figure 7.
8. Install the pedals in the right running board as follows (Refer to Figure 6):
   a. Insert the brake pedal through the running board and align with the brake lever beneath the right running board. Secure with the two longer hex wash. hd. tapp screws.
   b. Slide the forward control pedal (arrow on pedal points forward) through the running board. Insert the pedal tab in the slot of the control lever and secure with the hex wash. hd. tapp screw.
   c. Slide the reverse control pedal (arrow on pedal points rearward) through the running board. Insert the pedal tab in the slot of the reverse shaft and secure with the hex wash. hd. tapp screw.

C. REINSTALL THE SEAT ASSEMBLY.

1. Lay the seat assembly on its side on top of the fender and plug the wire harness connector onto the seat switch. Refer to Figure 5.

2. Carefully position the seat assembly on the fender. Align the rear slide channel holes and fender holes with the mounting holes of the frame. Fasten with two torx head (or socket hd.) screws.

3. Slide the seat rearward, align the front holes and fasten with the remaining two torx head (or socket hd.) screws.

D. INSTALL THE NEW LIFT HANDLE.

1. From under the left fender, note the direction of the hex cap screw and lock nut in the existing handle clamp (See Figure 44).

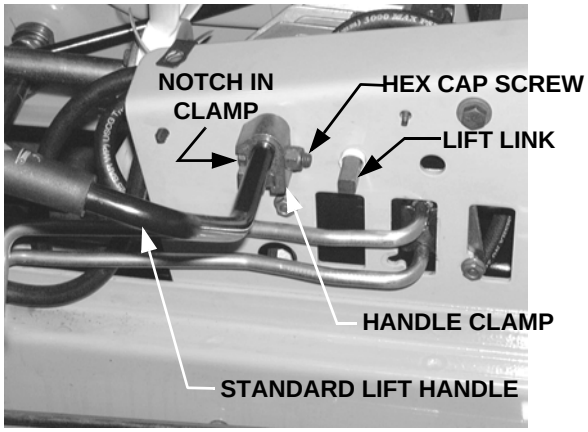


Figure 44

2. In the same direction as the existing clamp, install the hex cap screw (B) and hex insert lock nut (D) in the handle clamp (16). Do not tighten the fasteners completely.

3. With the notch of the clamp facing forward, insert the new handle (14) into the upper hole from the left side of the clamp (Refer to Figure 44).

4. Remove the cover plate from the inner slot of the lift lever cover on the left fender (See Figure 45). **NOTE**: *It may be necessary to cut the connecting edges of the cover plate. If so, use caution to avoid cutting the lift handle flap underneath the plate.*

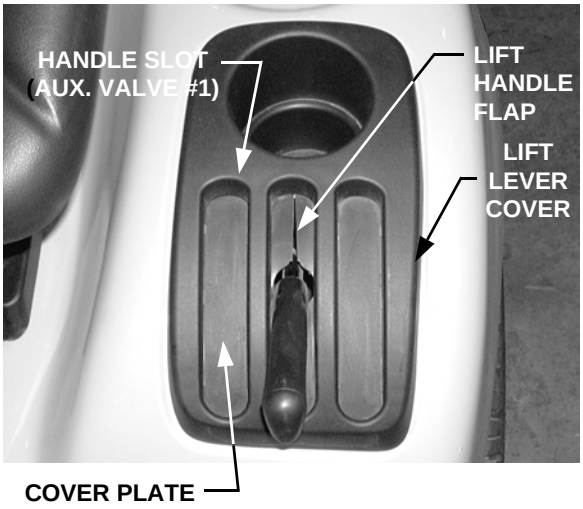


Figure 45

5. Maneuver the new lift handle up through the inner slot of the lift lever cover and slide the clamp onto the arm of the lift link.

6. Holding the clamp on the lift link, slide the handle into, or out of, the clamp as necessary to align with the center of the slot. Tighten the hex cap screw (B) and insert lock nut (D).

7. Install the left rear wheel on the axle. In an alternating pattern, torque the lug nuts to 60 ft. lbs.

8. Jack the rear of the tractor up to remove the jack stands, then lower to the ground.

9. Install the side panels and close the hood per the instructions in the tractor Operator's Manual.

10. Engage the parking brake and start the tractor.

11. By actuating the newly installed lift handle fully in both directions, completely cycle the hydraulic lift system **several** times. This will prime the system and force any air from it.

12. Stop the engine.

13. Remove the dipstick and check the transmission oil level. Add sufficient oil to the transmission to bring the oil level to the full mark on the dipstick. DO NOT OVERFILL. USE ONLY THE SPECIFIED OIL

E. CHECK OPERATION.

If all previous installation procedures were correctly performed, the front hitch should raise when the lift handle is pulled upward (rearward) and lower when pushed downward (forward). If the opposite actions occur, switching the hose connections at the cylinder will correct the problem. Proceed a follows:

CAUTION

Position a suitable container to catch any oil leakage. Obey all applicable laws for disposal of oil.

1. Lower the front hitch to its lowest position and stop the tractor engine.
2. Because the oil may be under pressure, carefully loosen the upper hose fitting from the cylinder elbow to relieve pressure (See Figure 46). Disconnect the hose.
3. Disconnect the lower hose and reconnect to the upper elbow. Connect the other hose to the lower elbow.

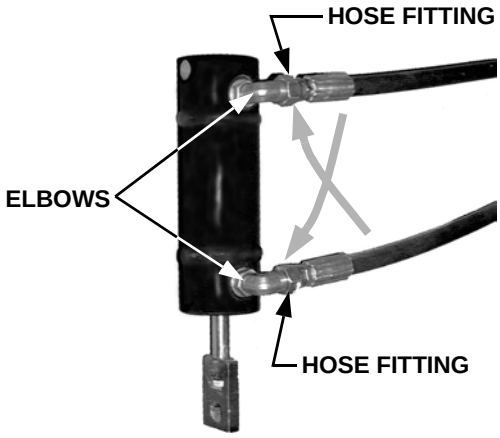


Figure 46

4. Start the tractor and completely cycle the hydraulic lift system **several** times to prime the system.
5. Recheck the oil level in the transmission and fill to the full mark on the dipstick.

Refer to the Operator's Manual of the specific attachment for hitching and operating instructions.

SECTION V. REMOVAL AND MAINTENANCE

A. REMOVAL. It is not necessary to completely remove the front hitch assembly when not in use. Remove as follows:

1. Compress the locking collar of the female fittings and disconnect the hoses from the coupling assemblies (See Figure 47). Snap the protective caps onto the coupling assemblies.
2. Remove the hoses from the hose support rod.

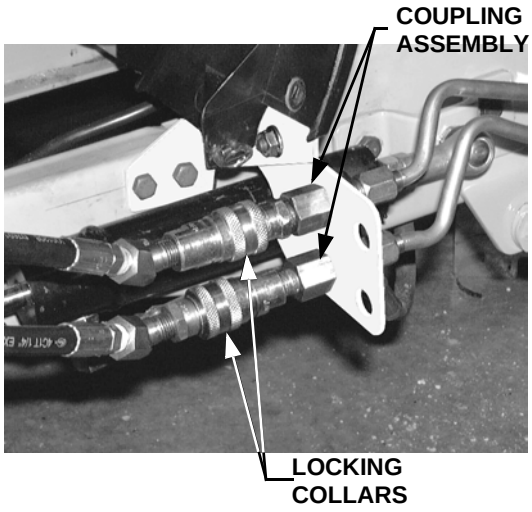


Figure 47

3. Remove the internal cotter pin and clevis pin fastening the top of the lift cylinder to the mounting plate (Refer to Figure 39).
4. Remove the wingnut knobs; then pull the pivot pins from the mounting and pivot plate assemblies to disconnect the front hitch assembly (See Figure 48).

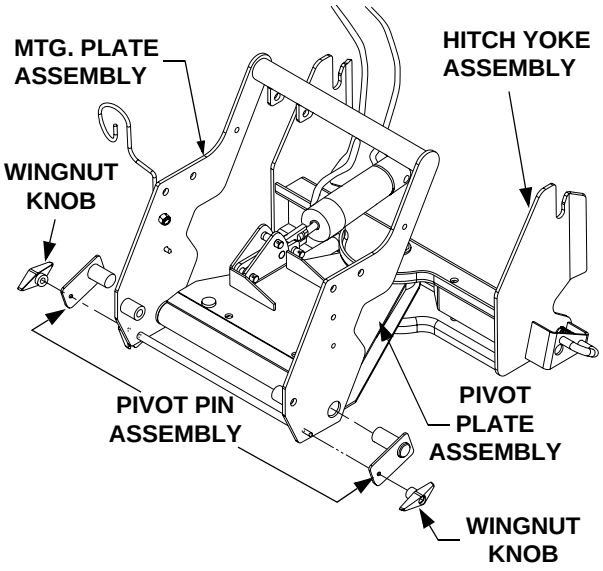


Figure 48

5. Reinstall the wingnut knobs to protect the threads of mounting plate studs.

6. The mounting plate can remain installed on the tractor.

B. MAINTENANCE.

Whenever the pivot pins are removed or once a year apply a light coating of high grade lubricating oil to the pins.

Once a year lubricate the front angling pivot shaft with Cub Cadet 251H EP grease. Use a grease gun to apply through the front lube fitting (See Figure 49).

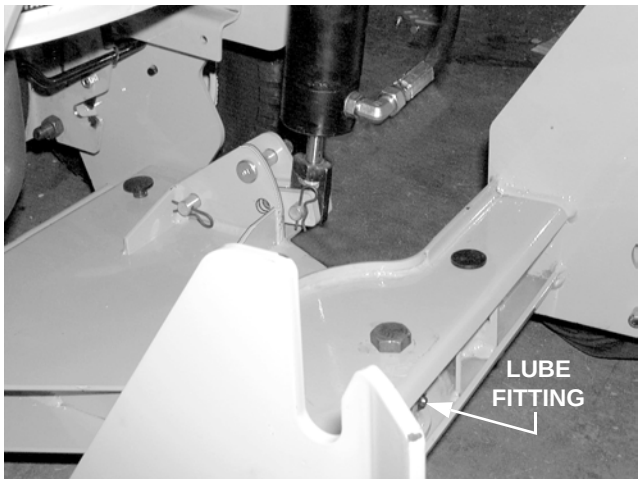


Figure 49

SECTION VI. OPTIONAL MANUAL ANGLING KIT (190-171)

The Mechanical Angling Assembly provides five positions for angling front hitch mounted attachments, such as the front blade or rotary sweeper.

A. INSTALLATION.

1. Remove the fixed shaft from the left side of the front hitch by removing the two internal cotter pins and clevis pins (See Figure 50).

2. With the adjustment handle facing outward, position the mechanical angling ass'y. between the pivot plate and hitch yoke. Insert the clevis pins and secure with the internal cotter pins.

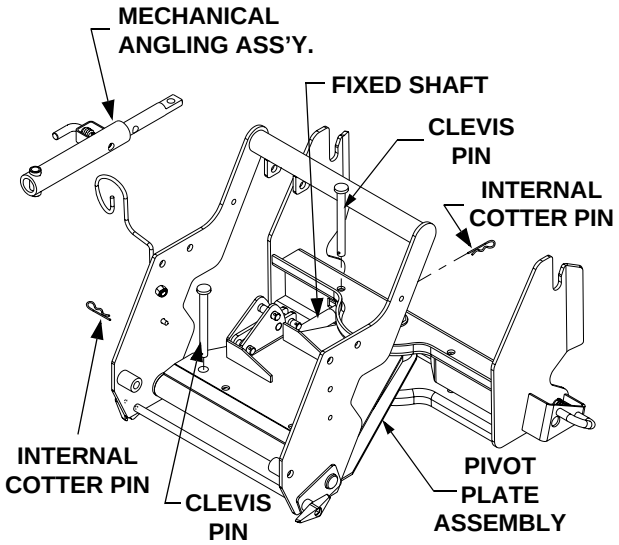


Figure 50

B. ADJUSTMENT.

WARNING

Always disengage the PTO, engage the parking brake, turn the ignition switch to "OFF" and remove the key before dismounting the tractor to adjust the front hitch angle.

1. Raise the attachment slightly off the ground.

2. Pull the adjustment handle outward and pivot the front hitch yoke *left* or *right* to the approximate position desired (See Figure 51). *NOTE: the index holes are 1.25 inches apart.*

3. Release the adjustment handle and pivot the hitch yoke slightly *left* and *right* until the handle snaps into the desired index hole.

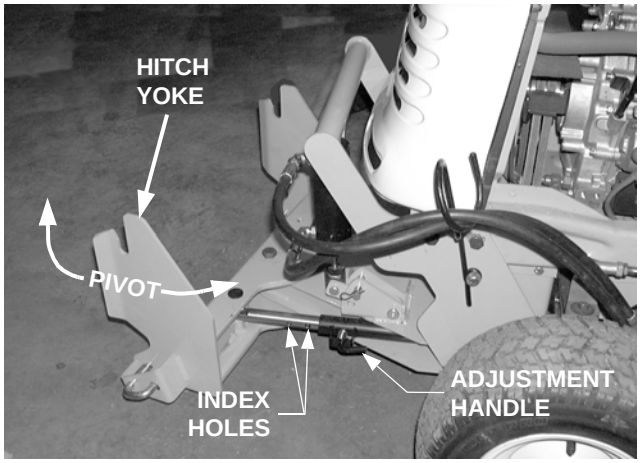


Figure 51

MANUFACTURER'S LIMITED WARRANTY FOR:

The limited warranty set forth below is given by Cub Cadet LLC with respect to new merchandise purchased and used in the United States, its possessions and territories.

"Cub Cadet" warrants this product against defects in material and workmanship for a period of two (2) years commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in materials or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water, or damage because of other peril or natural disaster. Damage resulting from the installation or use of any part, accessory or attachment not approved by Cub Cadet for use with the product(s) covered by this manual will void your warranty as to any resulting damage.

Normal wear parts are warranted to be free from defects in material and workmanship for a period of thirty (30) days from the date of purchase. Normal wear parts include, but not limited to items such as: batteries, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates, auger spiral rubber and tires.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE, through your local authorized service dealer. To locate the dealer in your area, check your Yellow Pages, or contact Cub Cadet LLC at P.O. Box 361131, Cleveland, Ohio 44136-0019, or call 1-877-282-8684, or log on to our Web site at www.cubcadet.com.

This limited warranty does not provide coverage in the following cases:

a. The engine or component parts thereof. These items may carry a separate manufacturer's warranty. Refer to applicable manufacturer's warranty for terms and conditions.
b. Log splitter pumps, valves, and cylinders have a sepa rate one year warranty.
c. Routine maintenance items such as lubricants, filters, blade sharpening, tune-ups, brake adjustments, clutch adjustments, deck adjustments, and normal deterioration of the exterior finish due to use or exposure.
d. Cub Cadet does not extend any warranty for products sold or exported outside of the United States, its possesions and territories, except those sold through Cub Cadet's authorized channels of export distribution.
e. Replacement parts that are not genuine Cub Cadet parts.
f. Service completed by someone other than an authorized service dealer.
g. Transportation charges and service calls.

No implied warranty, including any implied warranty of merchantability of fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product, shall bind Cub Cadet. During the period of the warranty, the exclusive remedy is repair or replacement of the product as set forth above.

The provisions as set forth in this warranty provide the sole and exclusive remedy arising from the sale. Cub Cadet shall not be liable for incidental or consequential loss or damage including, without limitation, expenses incurred for substitute or replacement lawn care services or for rental expenses to temporarily replace a warranted product.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. **Alteration of safety features of the product shall void this warranty.** You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser or to the person for whom it was purchased as a gift.

HOW STATE LAW RELATES TO THIS WARRANTY: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

IMPORTANT: Owner must present Original Proof of Purchase to obtain warranty coverage.

Cub Cadet LLC, P.O. BOX 361131 CLEVELAND, OHIO 44136-0019; Phone: 1-877-282-8684